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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Todor Georgiev
Serial No. : 09/996,200
Filed : November 28, 2001
Title : A TOOL FOR EXTRACTING AND MANIPULATING COMPONENTS OF
WARPING TRANSFORMS

Art Unit : 2672
Examiner : Ryan R. Yang

Mail Stop Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

In light of the examiner's view that the Thomas reference kills the patentability of the applicant's claims, it is striking how different Thomas's scheme really is from the applicant's, both in the goal it is trying to achieve and how it reaches its goal.

Simply put, Thomas aims to animate an undistorted object (say, a square) during the fleeting period when a user is, for example, dragging a corner of it to enlarge it (or move it or rotate it). The goal is to make the square seem real to the user. To achieve this, Thomas distorts the undistorted square in a succession of frames during the fleeting period of animation while the user is dragging (see Thomas' figure 2).

The applicant's technique, in stark contrast, has nothing to do with a user dragging a point of an object to cause the object to get larger (or be rotated or to move the object across a screen), let alone with animating the object to make it seem real. Instead the applicant's technique aims to enable a user, for example, to work with a distorted image (one that may have been subjected to multiple distortion components) by applying a selected one of the distortion components from one part of the image to another part of the image and to have the changes retained with the image.

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In the applicant's scheme, in order to be able to apply the distortion feature from one part of the image to another, a record needs to be kept of the distortion to which the image had already been subjected. This record is kept in a distortion grid that, in some implementations, keeps track, pixel-by-pixel, of the aggregate of the distortion components to which each pixel had been previously subjected. When a user identifies a pixel of an image and a distortion component to be extracted from it, the component can be extracted from the data stored in the distortion grid and applied to a user-selected other region of the image.

Because the information in each cell of the applicant's distortion grid represents an irreversible conflation of the possibly multiple distortion components that had previously been applied to the corresponding image pixel, it would not be possible to extract the distortions directly from the value in that cell alone. However, the extraction is possible when the values stored in neighboring cells of the distortion grid are also used.

These features of the applicant's technique are expressed in claim 1, for example, as follows.

The claim refers to the distorted image that the user is working with as the "first image". To make clear that stored distortion information is needed to permit extraction of a selected distortion component, claim 1 makes clear that the selected area of the first image "relates to an area on the distortion grid." The use of neighboring cells of the distortion grid to enable extraction is made clear in the phrase "using ... points local to the ... [selected] area to calculate distortion" and "extracting ... [a] component of the distortion". Then the extracted component can be applied to, e.g., a user-selected "second area of the first image."

Almost none of the elements of claim 1 is described or suggested in Thomas. The square selected by the user in Thomas could not be an "area of a first image which relates to an area on a distortion grid" because Thomas does not store historical information about distortion components to which the square had been subjected. To achieve his animation, Thomas does calculate a distortion but the calculation is based on how far and in what direction the user is trying to drag the corner of the square, not on information about points local to (that is, in the neighborhood of) the square. And what Thomas's scheme does with respect to distortion is to

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apply the distortion to the rectangle during animation. Thomas has no interest in and does nothing to extract a component of distortion.

* * *

The applicant respectfully asks that the appealed claims be allowed. The absence of a reply to any specific comment provided in the Examiner's Answer does not signify agreement with or concession of that comment.

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Respectfully submitted,

Date: 5/17/05



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